

## THE SOUNDING OF GLACIERS

TECHNIQUE DES SONDAGES SOUS-GLACIAIRES. A. BOURGIN. *Revue de Géographie Alpine* (Grenoble). Tome 38, Fasc. 4, 1950, p. 623-32.

LES SONDAGES SISMIQUES DE LA COMMISSION HELVÉTIQUE DES GLACIERS. A. RENAUD and P. L. MERCANTON. *Publications du Bureau Central Sismologique International*, Série A, Travaux Scientifiques, Fasc. 17, 1950, p. 66-78. (Mémoires présentés à l'Assemblée d'Oslo 1948.)

DETAILED information on subglacial conditions is clearly a fundamental necessity for the advance of scientific glaciology. It is most desirable, therefore, to publish as many details as possible of available techniques of glacier sounding, and the relative success of these. There has been very considerable activity in this field in connexion with recent hydrological surveys in Europe, particularly in France and Switzerland, and reports on glacier soundings from these countries are, therefore, especially welcome. Both of the above papers include discussions of the theoretical backgrounds and development of the techniques used, together with some details of recent work. In the case of the Swiss glaciers the seismic method was employed, on the French glaciers thermal borings were also used.

It is clear that most valuable results have been obtained. Of those already published the detailed cross-section of the Mer de Glace, showing a V-shaped profile very different from that which would be expected according to orthodox views, will perhaps be of particular interest to glaciologists. We must be grateful that in many instances the glaciers investigated by the hydrological commissions have been the same as those of which many other studies have already been made. The new results are of so much the greater value to us.

It would appear that the writers of the papers are, on the whole, conversant only with Continental sources, and although Renaud and Mercanton mention the work of Perutz in 1948 on thermal soundings, Bourgin is clearly unaware that the method was developed quite independently by Perutz and Gerrard. However, such lack of contact must of necessity disappear with the publication of papers such as these.

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SNOW AND ICE PROBLEMS IN CANADA AND THE U.S.A. MARCEL R. DE QUERVAIN.  
*National Research Council of Canada, Division of Building Research; Technical Report No. 5.*  
February, 1950, 69 pages, illustrations, diagrams, 3 appendixes.

IN 1948, by arrangement with the Swiss authorities, Dr. M. R. de Quervain went to North America as a guest member of the staff of the National Research Council of Canada, Division of Building Research. The main purpose of the visit was to examine the problems of snow and ice in relation to the Canadian economy. The report on his findings, submitted by Dr. de Quervain and published by the National Research Council, is a notable contribution to the advancement of snow and ice study in Canada and the U.S.A.

In a preface, Mr. R. F. Legget, Director of the Building Research Division, states that "possibly the most important result of Dr. de Quervain's visit was the demonstration that the basic problems of the two countries (Switzerland and Canada) are fundamentally identical." The difference, emphasized by the report, is the varying importance attached to those problems. Dr. de Quervain points out that "in Switzerland, avalanches are problem number one whereas ice jams on rivers are quite subordinate." In Canada the reverse is the case.

To quote from the report, glaciers are "the least important from the practical standpoint. Their hydrological influence is rather local with regard to the vast dimensions of the country." The rate

of recession in Canadian glaciers kept under observation averages 50 to 100 feet a year and "the shrinkage has been speeded up in the years immediately passed."

Based on his findings, Dr. de Quervain has made specific recommendations to the National Research Council. One suggestion in the report itself is "the idea of an ice-testing bomb for aircraft."

In an appendix, D. C. Pearce summarizes his journey with Dr. de Quervain to visit snow and ice institutions in Canada and the U.S.A. Including an ice reconnaissance flight, "which revealed most strikingly the extent of the ice cover on Hudson Bay," the party covered approximately 15,000 miles in two and a half months.

A. H. BOLITHO

**MOUNTAINEERING HANDBOOK.** Published for the Association of British Members of the Swiss Alpine Club, 1950. London: Paternoster Press. 168 pages, 60 illustrations.

THIS book is appropriately mentioned in these columns for the fact that it provides valuable help to those glaciologists who intend doing research work on snow mountains and glaciers but may not be experienced alpinists. Three excellent chapters are devoted to this aspect of the subject. Translated from the Swiss *Bergsteigen* by a panel of expert British mountaineers it speaks with double authority and is strongly recommended for the soundness of its approach and its clarity, not only to those mentioned above but to all who intend wandering or climbing in the mountains.

G. S.

**REVUE DE GÉOMORPHOLOGIE DYNAMIQUE.** (Édition de la Société d'Enseignement Supérieur, Paris). No. 1, 1950, 52 pages.

As a result of the cessation of publication of several journals it had proved difficult to find a suitable vehicle for long and heavily illustrated articles on geomorphological and cognate subjects. In order to fill this gap a new publication edited by Mm. André Cailleux and Jean Tricart has been produced. It will be published bi-monthly, each number consisting of 48 pages. The entries in the bibliographical section are "displayed," which permits of their being cut out and mounted on cards. This should be a very convenient feature, if somewhat wasteful of space.

The first number is mimeographed, but perhaps one may hope for a printed journal later. This new venture has the support of many distinguished scientists and members of other faculties and this, coupled with the well-known names of the Editors, should guarantee its success. Correspondence should be addressed to the Laboratoire de Géographie, Université de Strasbourg.

G. S.

## ABSTRACTS

DULHUNTY, J. A. On glacial lakes in the Kosciusko Region. *Journal and Proceedings Royal Society of New South Wales*, Vol. 79, Pt. IV, 1945 (published 1946), p. 143-52.

From an examination of the contours and soundings made with a specially contrived apparatus, it is concluded that abnormal conditions of vegetation and soil formation existing on the undissected, glaciated surface of the Kosciusko region have been responsible for the survival of alpine lakes throughout the post-glacial period. [G. S.]

HOUGH, JACK L. Pleistocene lithology of Antarctic ocean-bottom sediments. *Journal of Geology*, Vol. 58, No. 3, 1950, p. 254-60.

Three ocean-bottom core samples were obtained from within the pack-ice area in the mouth of the Ross Sea, Antarctica, during the U.S. Navy Antarctic Expedition of 1946-47. These cores consist of several alternations of glacial marine sediment and of fine-grained sediment which apparently is nonglacial. Age determinations of the material, made by Dr. W. D. Urry, provide a time scale on which the lithology may be plotted. Because the cores record periods of from one hundred and seventy thousand to over a million years, a record of the Pleistocene glacial history of Antarctica is provided. A comparison of this with the record for the Northern Hemisphere indicates that glaciation was contemporaneous in the two hemispheres. [Author's abstract.]